

FIG. 1

Tagged lipocalin reporter expression vector

2 / 15

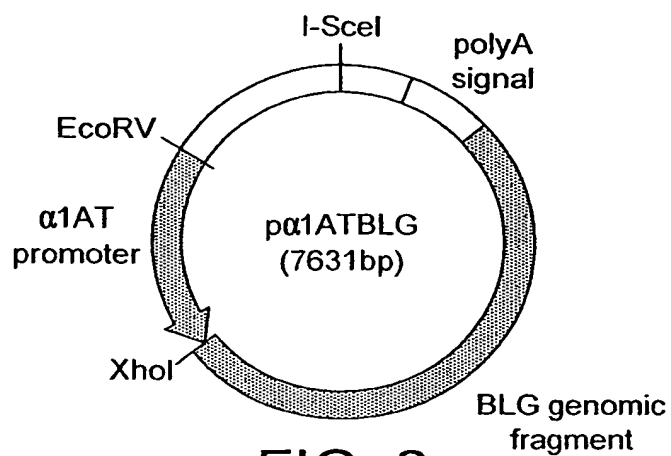


FIG. 2

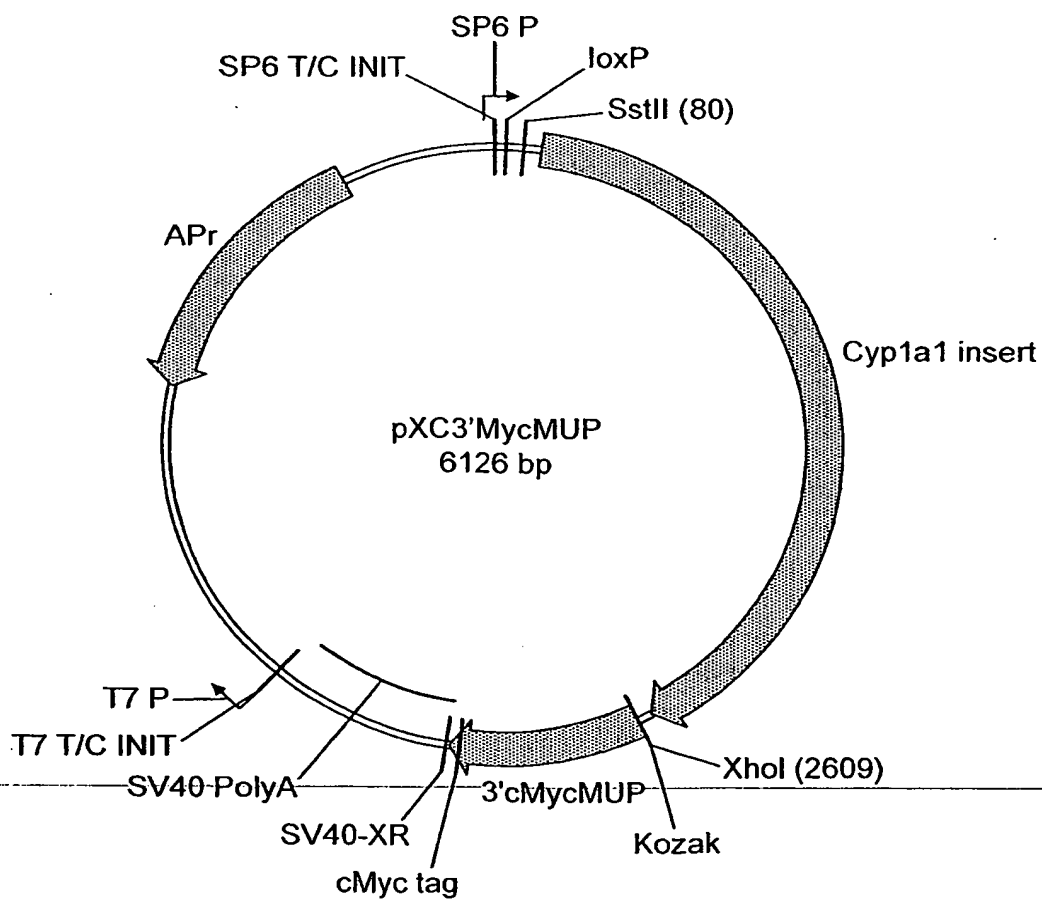


FIG. 3

3 / 15

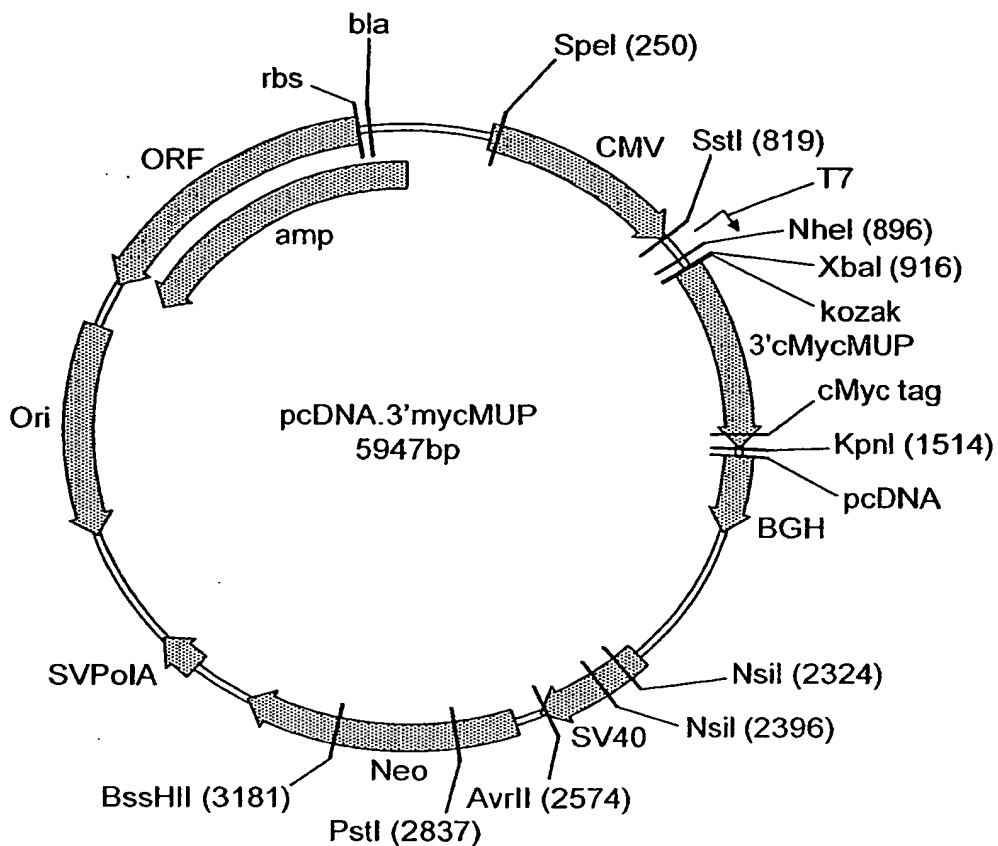


FIG. 4

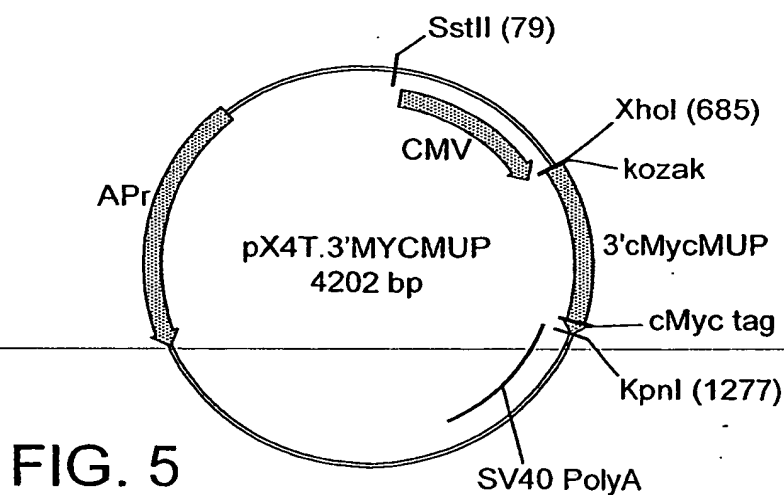
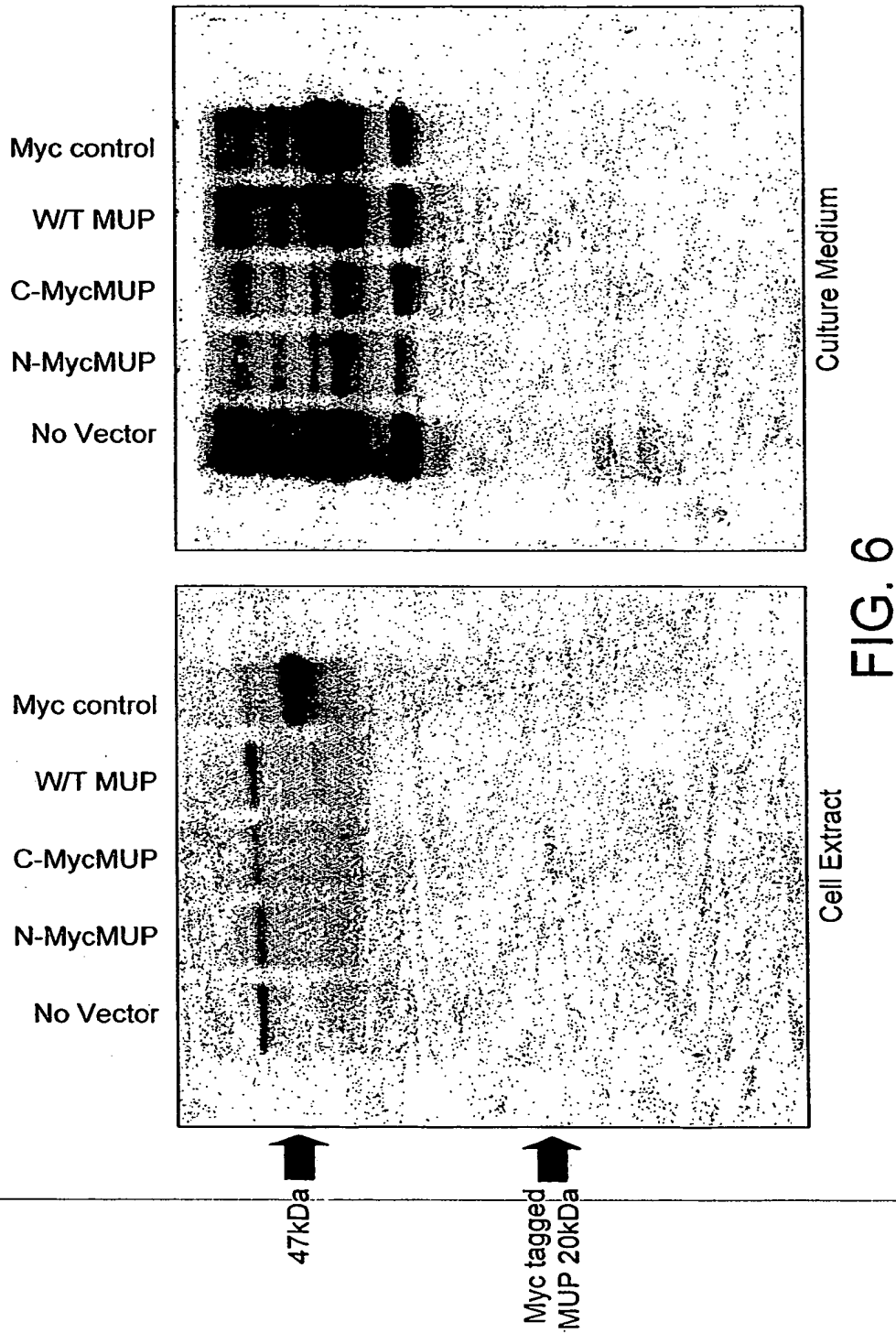


FIG. 5

4 / 15



5 / 15

1 MetLysMetLeuLeuLeuLeuCysLeuGlyLeuThrLeuValCysValHisAlaGluGlu  
 ATGAAGATGCTGCTGCTGCTGTTTGGGACTGACCTAGTCTGTGTCCATGCAGAAGAA  
 61 AlaSerSerThrGlyArgAsnPheAsnValGluLysIleAsnGlyGluTrpHisThrIle  
 GCTAGTTCTACGGGAAGGAACCTTAAATGTAGAAAAGATTAATGGGGAATGGCATACTATT  
 121 IleLeuAlaSerAspLysArgGluLysIleGluAspAsnGlyAsnPheArgLeuPheLeu  
 ATCCTGGCCTCTGACAAAAGAGAAAAGATAGAAGATAATGGCAACTTTAGACTTTTTCTG  
 181 GluGlnIleHisValLeuGluLysSerLeuValLeuLysPheHisThrValArgAspGlu  
 GAGCAAATCCATGTCTTGGAGAAATCCTTAGTTCTTAAATTCCATACTGTAAGAGATGAA  
 241 GluCysSerGluLeuSerMetValAlaAspLysThrGluLysAlaGlyGluTyrSerVal  
 GAGTGCTCGGAATTATCTATGGTTGCTGACAAAACAGAAAAGGCTGGTGAATATTCTGTG  
 301 ThrTyrAspGlyPheAsnThrPheThrIleProLysThrAspTyrAspAsnPheLeuMet  
 ACGTATGATGGATTCAATACATTTACTATACCTAAGACAGACTATGATAACTTTCTTATG  
 361 AlaHisLeuIleAsnGluLysAspGlyGluThrPheGlnLeuMetGlyLeuTyrGlyArg  
 GCTCATCTCATTAACGAAAAGGATGGGGAACCTTCCAGCTGATGGGGCTCTATGGCCGA  
 421 GluProAspLeuSerSerAspIleLysGluArgPheAlaGlnLeuCysGluLysHisGly  
 GAACCAGATTTGAGTTCAGACATCAAGGAAAGGTTTGCACAACCTATGTGAGAAGCATGGA  
 481 IleLeuArgGluAsnIleIleAspLeuSerAsnAlaAsnArgCysLeuGlnAlaArgGlu  
 ATCCTTAGAGAAAATATCATTGACCTATCCAATGCCAATCGCTGCCTCCAGGCCCGAGAA  
 \*\*\*  
 541 TGA

FIG. 7

1 GlyProLeuGlySerMetGluGlnLysLeuIleSerGluGluAspLeuThrMetGluAla  
 GGGCCCCCTGGGATCCATGGAGCAGAAACTCATCTCTGAAGAGGATCTGACCATGGAAGCT  
 61 SerSerThrGlyArgAsnPheAsnValGluLysIleAsnGlyGluTrpHisThrIleIle  
 AGTTCTACGGGAAGGAACCTTAAATGTAGAAAAGATTAATGGGGAATGGCATACTATTATC  
 121 LeuAlaSerAspLysArgGluLysIleGluAspAsnGlyAsnPheArgLeuPheLeuGlu  
 CTGGCCTCTGACAAAAGAGAAAAGATAGAAGATAATGGCAACTTTAGACTTTTTCTGGAG  
 181 GlnIleHisValLeuGluLysSerLeuValLeuLysPheHisThrValArgAspGluGlu  
 CAAATCCATGTCTTGGAGAAATCCTTAGTTCTTAAATTCCATACTGTAAGAGATGAAGAG  
 241 CysSerGluLeuSerMetValAlaAspLysThrGluLysAlaGlyGluTyrSerValThr  
 TGCTCGGAATTATCTATGGTTGCTGACAAAACAGAAAAGGCTGGTGAATATTCTGTGACG  
 301 TyrAspGlyPheAsnThrPheThrIleProLysThrAspTyrAspAsnPheLeuMetAla  
 TATGATGGATTCAATACATTTACTATACCTAAGACAGACTATGATAACTTTCTTATGGCT  
 361 HisLeuIleAsnGluLysAspGlyGluThrPheGlnLeuMetGlyLeuTyrGlyArgGlu  
 CATCTCATTAACGAAAAGGATGGGGAACCTTCCAGCTGATGGGGCTCTATGGCCGAGAA  
 421 ProAspLeuSerSerAspIleLysGluArgPheAlaGlnLeuCysGluLysHisGlyIle  
 CCAGATTTGAGTTCAGACATCAAGGAAAGGTTTGCACAACCTATGTGAGAAGCATGGAATC  
 481 LeuArgGluAsnIleIleAspLeuSerAsnAlaAsnArgCysLeuGlnAlaArgGlu\*\*\*  
 CTTAGAGAAAATATCATTGACCTATCCAATGCCAATCGCTGCCTCCAGGCCCGAGAATGA

FIG. 8

6 / 15

GlyProLeuGlySerMetAlaIleIleValThrGlnThrMetLysGlyLeuAspIleGln  
 1 GGGCCCCTGGGATCCATGGCCATCATCGTCACCCAGACCATGAAAGGCCTGGACATCCAG  
 LysValAlaGlyThrTrpHisSerLeuAlaMetAlaAlaSerAspIleSerLeuLeuAsp  
 61 AAGGTGGCGGGGACTTGGCACTCCTTGGCTATGGCGGCCAGCGACATCTCCCTGCTGGAT  
 AlaGlnSerAlaProLeuArgValTyrValGluGluLeuLysProThrProGluGlyAsn  
 121 GCCCAGAGTGCCCCCTGAGAGTGACGTGGAGGAGCTGAAGCCCACCCCGAGGGCAAC  
 LeuGluIleLeuLeuGlnLysTrpGluAsnGlyGluCysAlaGlnLysLysIleIleAla  
 181 CTGGAGATCCTGCTGCAGAAATGGGAGAACGGCGAGTGTGCTCAGAAGAAGATTATTGCA  
 GluLysThrLysIleProAlaValPheLysIleAspAlaLeuAsnGluAsnLysValLeu  
 241 GAAAAAACCAAGATCCCTGCGGTGTTCAAGATCGATGCCTTGAATGAGAACAAAGTCCTT  
 ValLeuAspThrAspTyrLysLysLysTyrLeuLeuPheCysMetGluAsnSerAlaGluPro  
 301 GTGCTGGACACCGACTACAAAAAGTACCTGCTCTTCTGCATGGAAAACAGTGCTGAGCCC  
 GluGlnSerLeuAlaCysGlnCysLeuValArgThrProGluValAspAsnGluAlaLeu  
 361 GAGCAAAGCCTGGCCTGCCAGTGCCTGGTCAGGACCCCGGAGGTGGACAACGAGGCCCTG  
 GluLysPheAspLysAlaLeuLysAlaLeuProMetHisIleArgLeuAlaPheAsnPro  
 421 GAGAAATTCGACAAAGCCCTCAAGGCCCTGCCATGCACATCCGGCTTGCCTTCAACCCG  
 ThrGlnLeuGluGlnCysHisValGluGlnLysLeuIleSerGluGluAspLeu\*\*\*  
 481 ACCCAGCTGGAGGGGCAGTGCCACGTGAGCAGAAACTCATCTCTGAAGAGGATCTGTAG

FIG. 9

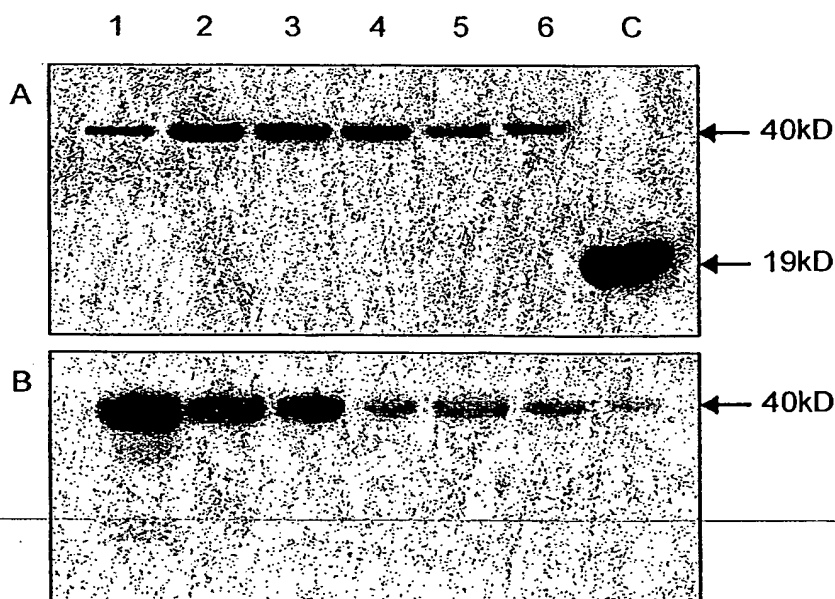


FIG. 10

7 / 15

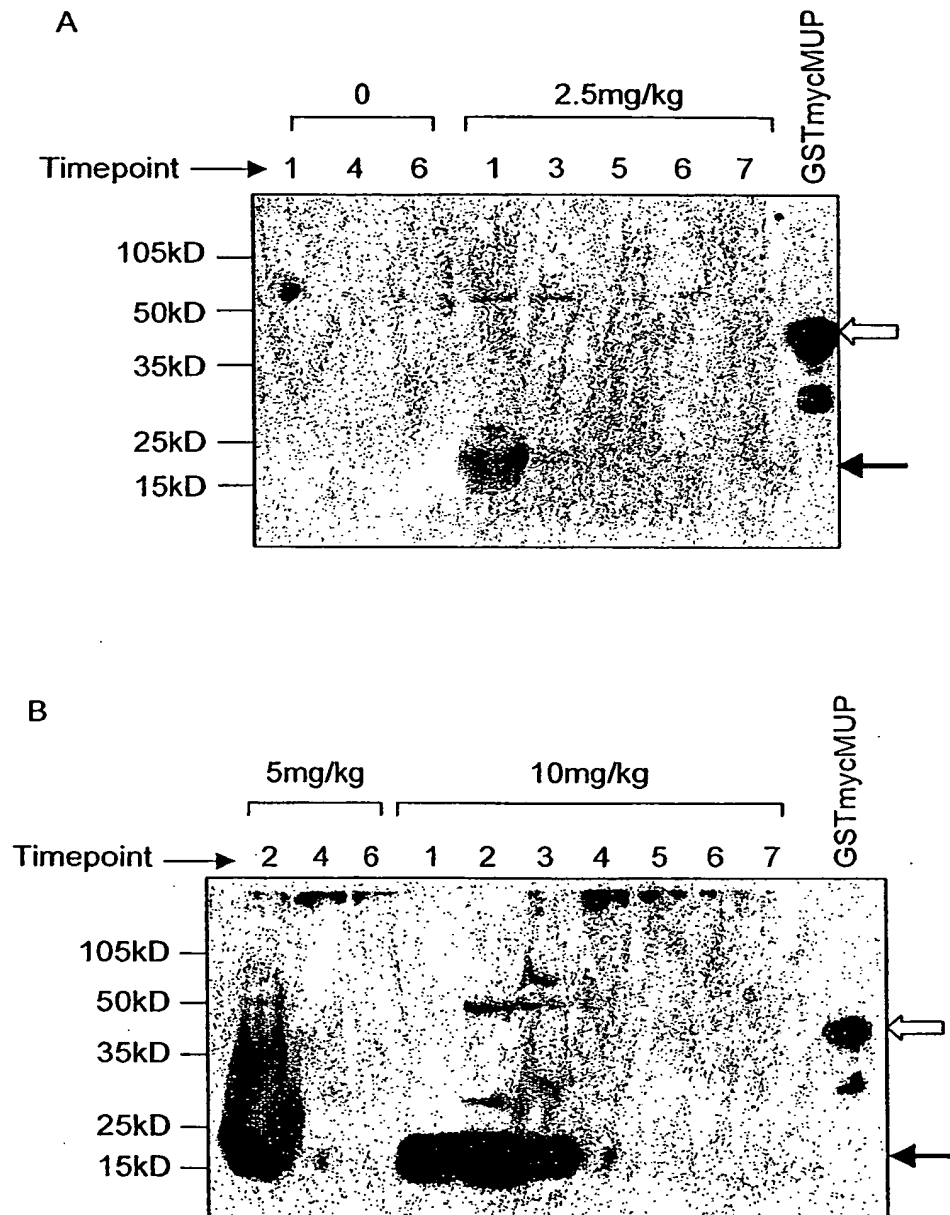


FIG. 11

8 / 15

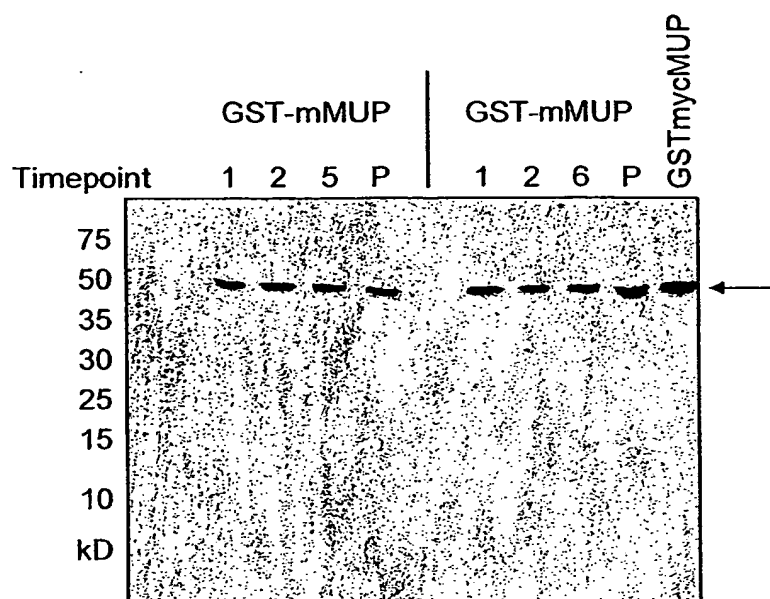


FIG. 12

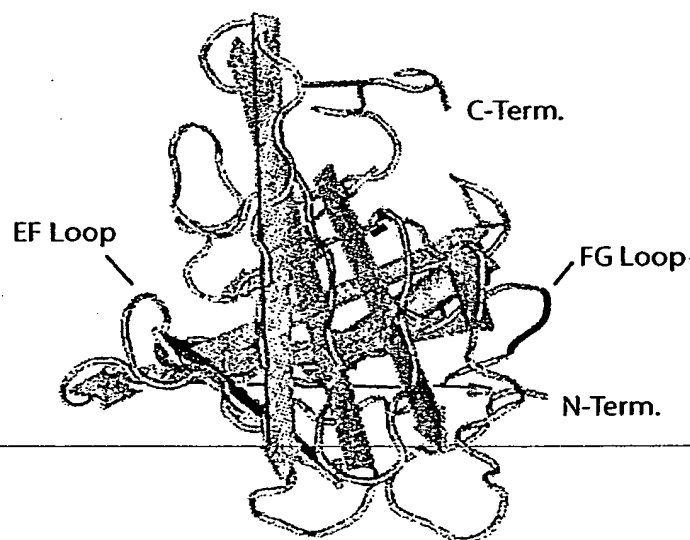


FIG. 13



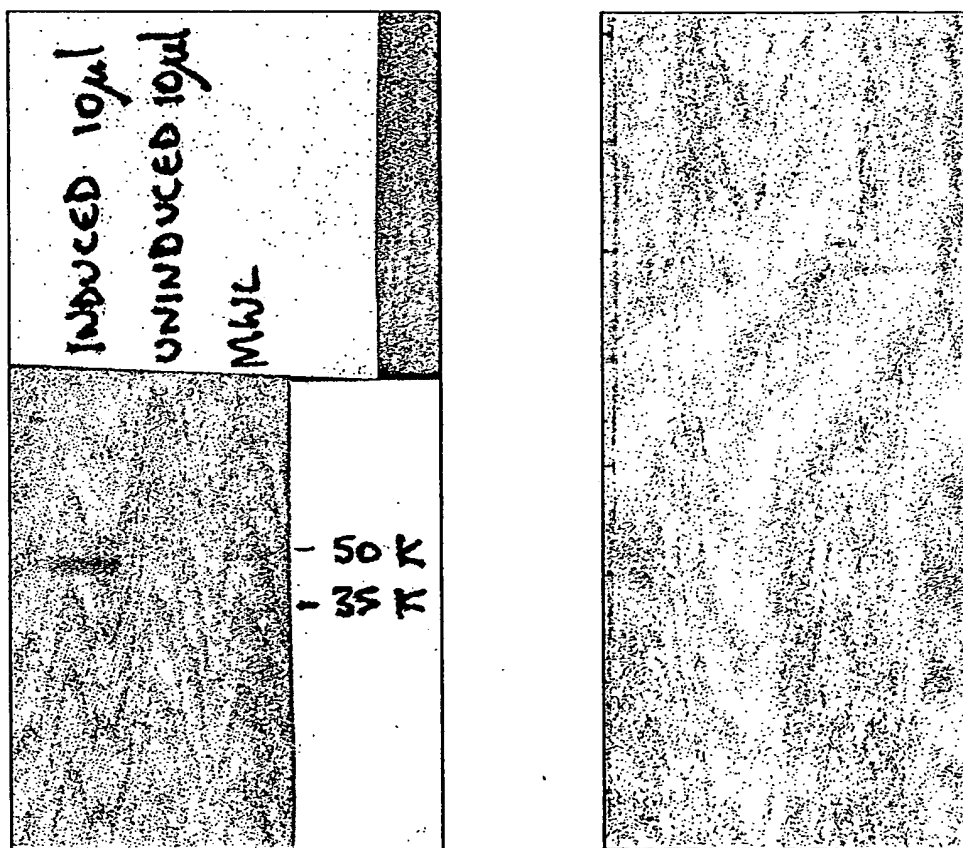


FIG. 14

		10 / 15
1	100	
SmmUP	100	
SM		
SML		
SML100		
101	200	
SmmUP	200	
SM		
SML		
SML100		
201	269	
SmmUP	269	
SM		
SML		
SML100		

+++++  
METDTLLLVVLLWVPGSTGDAAPARRARTKLGTELGSMEQKLISEEDLTMEASSTGRNFNVEKINGEWHHTIIILASDKREKIEDNGNFRLFLEQIHVL  
METDTLLLVVLLWVPGSTGDAAPAKMMLLLCLGLTLVCVH-----AEEASSTGRNFNVEKINGEWHHTIIILASDKREKIEDNGNFRLFLEQIHVL  
METDTLLLVVLLWVPGSTGDAAPAKMMLLLCLGLTLVCVH-----AEEASSTGRNFNVEKINGEWHHTIIILASDKREKIEDNGNFRLFLEQIHVL  
METDTLLLVVLLWVPGSTGDAAPAKMMLLLCLGLTLVCVH-----AEEASSTGRNFNVEKINGEWHHTIIILASDKREKIEDNGNFRLFLEQIHVL  
EKSLLVKFHTVRDEECSELSMVADKTEKAGEYSVTYDGNTFTIPKTDYD-----NFLMAHLINERKDGTFQLMGLYGREPDLSDDIKE  
EKSLLVKFHTVRDEECSELSMVADKTEKAGEYSVTYDGNTFTIPKTDYD-----NFLMAHLINERKDGTFQLMGLYGREPDLSDDIKE  
EKSLLVKFHTVRDEECSELSMVADKTEKAGEYSVTYDGNTFTIPKTDYDKL---GTGSSS---EENFLMAHLINERKDGTFQLMGLYGREPDLSDDIKE  
EKSLLVKFHTVRDEECSELSMVADKTEKAGEYSVTYDGNTFTIPKTDYDKLVNFRFSTVRRRAEFNFLMAHLINERKDGTFQLMGLYGREPDLSDDIKE  
RFAQLCEKHGILRENIIDLSNANRCLQARE-----  
RFAQLCEKHGILRENIIDLSNANRCLQAREEQKLISEEDLAAARGGPEQKLISEEDLNSAVDHHHHHH--  
RFAQLCEKHGILRENIIDLSNANRCLQAREEQKLISEEDLAAARGGPEQKLISEEDLNSAVDHHHHHH--  
RFAQLCEKHGILRENIIDLSNANRCLQAREEQKLISEEDLAAARGGPEQKLISEEDLNSAVDHHHHHH--

FIG. 15

11 / 15

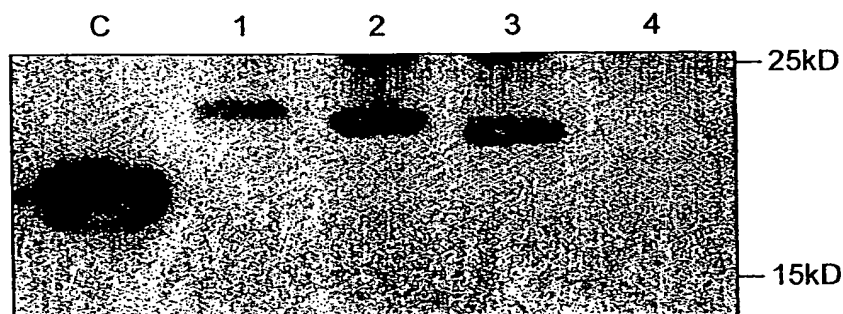


FIG. 16

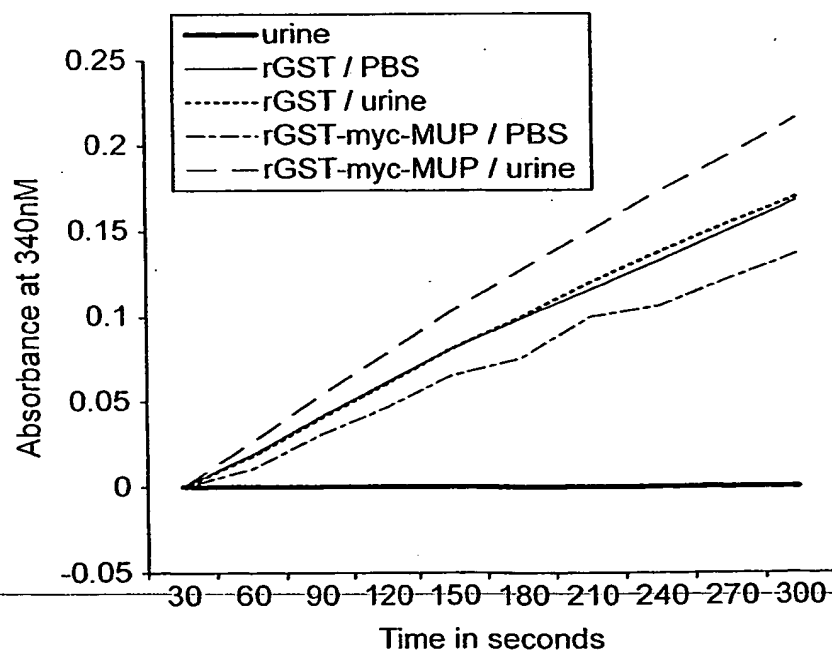


FIG. 17

12 / 15

## FIG. 18

1	gtgctcagca	acacacccag	caccagcatt	cccgctgctc	ctgaggctctg	caggcagctc
61	gctgtagcct	gagcgggtgtg	gaggggaagt	tcctgggaga	tttaaaatgt	gagaggcggg
121	aggtgggagg	ttgggcccctg	tgggcctgcc	catcccacgt	gcctgcatta	gccccagtgc
181	tgctcagccg	tgcccccgcc	gcaggggtca	ggtcactttc	ccgtcctggg	gttattatga
241	ctcttgatcat	tgccattgcc	atTTTTgcta	ccctaactgg	gcagcagggtg	cttgcagagc
301	cctcgatacc	gaccagggtcc	tcctctggag	ctcgacctga	accccatgtc	acccttgccc
361	cagcctgcag	aggggtgggtg	actgcagaga	tcccttcacc	caaggccacg	gtcacatggt
421	ttggaggagc	tggtgcccac	ggcagaggcc	accctccagg	acacacctgt	ccccagtgt
481	ggctctgacc	tgctcttgct	taagaggctg	accccggaag	tgctcctggc	actggcagcc
541	agcctggacc	cagagtccag	acacccacct	gtgccccgcg	ttctgggggtc	taccaggaac
601	cgtctaggcc	cagaggggga	cttctgtctt	ggccttggtg	ggaagaaggc	ctcctattgt
661	cctcgtagag	gaagccaccc	cggggcctga	ggatgagcca	agtgggattc	cgggaacccg
721	gtggctgggg	gcccagcccg	ggctggctgg	cctgcattgcg	cctcctgtat	aaggccccaa
781	gcctgcctgt	ctcagccctc	cactccctgc	agagctcaga	agcacgaccc	cagctgcagc
841	catgaagtgc	ctcctgtctg	ccctgggcct	ggcctcgcgc	tgtggcgctc	aggccatcat
901	cgtcaccag	accatgaaag	gcctggacat	ccagaagggt	cgagggttgg	ccgggtgggt
961	gagttgcagg	gcgggcaggg	gagctggggc	tcagagagcc	aagagaggct	gtgacgttgg
1021	gttcccatca	gtcagctagg	gccactgtac	aaatccccgc	tggggcagct	tgaagtcagg
1081	gttcaactgtc	ttgcattctg	gaggctggaa	gcccgaagtc	cagggtgttg	cagggtctggc
1141	ttctcctgcg	gccgctctct	ggggagcaga	cggccgtctt	ctccagtcct	ctgcgcgccc
1201	tgatttctct	ttcctgtgag	gccaccaggc	ctgctggaaa	cacgcctgcc	tgcgcagctt
1261	cacacgacct	ttgtcatctc	tttaaaggcc	atgtctccag	agtcatgtgt	tgaagttctg
1321	ggggttagtg	ggacacagtt	cagcccctaa	aagagtctct	ctgccccca	aattttcccc
1381	acctccagcc	atgtctcccc	aagatccaaa	tggtgctaca	tgtggggggg	ctcatctggg
1441	tcctctcttg	ggttcagtg	gagtcctggg	agagcattcc	ccagggtgca	gagttggggg
1501	gagtatctca	gggctgcccc	ggccgggggt	ggacagagag	cccactgtgg	ggctgggggc
1561	cccttcccac	ccccagagtg	caactcaagg	tccctctcca	ggtggcgggg	acttggcact
1621	ccttggtctat	ggcgccagc	gacatctccc	tgctggatgc	ccagagtgc	ccccagagag
1681	tgtacgtgga	ggagctgaag	cccacccccg	agggaacct	ggagatcctg	ctgcagaaat
1741	ggtgggcgct	tctccccaac	atggaacccc	cactccccag	ggctgtggac	cccccggggg
1801	gtgggggtgca	ggagggacca	gggccccagg	gctgggggag	agggtctcaga	gtttactggt
1861	acccggcgct	ccacccaagg	ctgccccacc	agggtttttt	ttttttttaa	acttttatta
1921	atTTgatgct	tcagaacatc	atcaaacaaa	tgaacataaa	acattcattt	ttgtttactt
1981	ggaaggggag	ataaaatcct	ctgaagtggg	aatgcatagc	aaagatacat	acaatgaggc
2041	aggtattctg	aattccctgt	tagtctgagg	attacaagt	tatttgagca	acagagagac
2101	atTTtcatca	tttctagtct	gaacacctca	tctatctaaa	tgaacaagaa	gtcctggaaa
2161	cgaagcagtg	tggggatagg	cccgtgtgaa	ggctgctggg	aggcagcaga	cctgggtctt
2221	cgggctcaag	cagttcccg	taccagccct	gtccacctca	gacgggggtc	agggtgcagg
2281	agagagctgg	atgggtgtgg	gggcagagat	ggggacctga	acccaggggc	tgctttttgg
2341	gggtgcctgt	ggtcaaggct	ctccctgacc	ttttctctct	ggcttcatct	gacttctcct
2401	ggccccacca	cccgttcccc	tggtgacctga	ggtgacagtg	agtgcgcgga	ggctagtgtg
2461	ccagctggct	cctatgcccc	tgccaccccc	ctccagccct	cctgggccag	cttctgcccc
2521	tggccctcag	ttcatcctga	tgaaaatggt	ccatgccaat	ggctcagaaa	gcagctgtct
2581	ttcagggaga	acggcgagtg	tgctcagaag	aagattattg	cagaaaaaac	caagatccct
2641	gcgggtgttca	agatcgatgg	tgagtcggg	tccctggggg	acacccacca	ccccgcgcc
2701	cggggactgt	ggacaggttc	agggggtctg	cgtcggggcc	tgggatgcta	agggactggt
2761	ggtgatgaag	acactgcctt	gacacctgct	tcacttgcc	cccctgccac	ctgccgggg
2821	ccttggggcg	gtggccatgg	gcaggtcccg	gctggcgggc	taacccacca	gggtgacacc
2881	cgagctctct	ttgctggggg	gcgggcgggt	ctctggggcc	tcaggctgag	ctcaggaggt
2941	acctgtgccc	tcccaggggt	aaccgagagc	cgttgcccc	tccagggggc	caggtgcccc
3001	acgacccag	cccgtccac	agctccttca	tctcctggag	acaaactctg	tccgcccctg
3061	ctcattcact	tgttcgtcct	aaatccgaga	tgataaagct	tcgagggggg	gttgggggtc
3121	catcagggtc	gcccttccgc	cgggcagcct	gggccacatc	tgcccttggc	cccctcagga
3181	ctcactctga	ctggaggccc	ctgactgact	gacgccaggg	tgccagccc	agggtctctg
3241	gcgccatcca	gctgcactgg	gtttgggtgc	tggtcctgcc	cccaagctgc	cgggacacca
3301	caggcagccg	gggctgcccc	ctggcctcgg	tcagggtgag	ccccagctgc	ccccgctcag
3361	ggcttgcccc	gacaatgacc	ccatcctcag	gacgcacccc	ccttcccttg	ctgggcagtg
3421	tccagcccca	cccagatcg	ggggaagccc	tatttcttga	caactccagt	ccctggggga
3481	gggggcccctca	gactgagtg	tgagtttcc	caagtccagg	aggtggtgga	gggtcctggc
3541	ggatccagag	ttgacagtga	gggttctctg	ggccccatgc	gcctggcagt	ggcagcaggg
3601	aagaggaagc	accatttcag	gggtggggga	tgccagaggc	gctccccacc	ccgtcttcgc

13 / 15

3661	cggggtgggtga	ccccggggga	gccccgctgg	tcgtggaggg	tgctgggggc	tgactagcaa
3721	cccctcccc	cccgttggaa	ctcacttttc	tccggtcttg	accgctcca	gccttgaatg
3781	agaacaaagt	ccttggtgctg	gacaccgact	acaaaaagta	cctgctcttc	tgcatggaaa
3841	acagtgtctga	gccccagcaa	agcctggcct	gccagtgcct	gggtgggtgc	caaccctggc
3901	tgcccaggga	gaccagctgc	gtggctccttg	ctgcaacagg	gggtgggggg	tggtgagcttg
3961	atccccagga	ggaggagggg	tggggggtcc	ctgagtcccg	ccaggagaga	gtggtcgcat
4021	accgggagcc	agtcgtctgt	gggcctgtgg	gtggctgggg	acggggggcca	gacacacagg
4081	ccgggagacg	ggtgggctgc	agaactgtga	ctggtgtgac	cgctcgcatg	gggcccgttg
4141	tcactgaatc	taacagcctt	tgttaccggg	gagtttcaat	tatttcccaa	aataagaact
4201	caggtacaaa	gccatctttc	aactatcaca	tcctgaaaac	aatggcagg	tgacattttc
4261	tgtgccgtag	cagtcaccct	gggcattttc	agggcccctg	tgccaggggg	gcgcgggcat
4321	cggcgagtgg	aggctcctgg	ctgtgtcagc	cggcccaggg	ggaggaaggg	accgggacag
4381	ccagaggtgg	ggggcaggct	ttccccctgt	gacctgcaga	cccactgcac	tgccctggga
4441	ggaagggagg	ggaactaggc	caagggggaa	gggcagggtgc	tctggagggg	aagggcagac
4501	ctgcagacca	ccctggggag	cagggactga	cccccgctcc	tgccccatag	tcaggacccc
4561	ggaggtggac	aacgaggccc	tggagaaatt	cgacaaagcc	ctcaaggccc	tgcccattgca
4621	catccggctt	gccttcaacc	cgaccagct	ggaggtgag	caccaggccc	cgcccttcc
4681	ccagggcagg	agccacccgg	ccccgggacg	acctcctccc	atggtgaccc	ccagctcccc
4741	aggcctccca	ggaggaaggg	gtggggtgca	gcaccccctg	ggggcccctt	ccccaccccc
4801	tgccaggcct	ctcttcccga	ggtgtccagt	cccatcctga	ccccccatg	actctccctc
4861	ccccacaggg	cagtgccacg	tctaggtgag	cccctgccgg	tgccctctgg	tgcaagctgcc
4921	tgccctggcc	cacgtcctgg	gcacacacat	ggggtagggg	gtcttgggtg	ggcctgggac
4981	cccacatcag	gccctggggt	ccccctgtg	agaatggctg	gaagctgggg	tccctcctgg
5041	cgactgcaga	gctggctggc	cgcgtgccac	tcttgtgggt	gacctgtgtc	ctggcctcac
5101	acactgacct	cctccagctc	cttccagcag	agctaaggct	aagtgagcca	gaatggtacc
5161	taaggggagg	ctagcgggcc	ttctcccag	gaggggctgt	cctggaacca	ccagcctagg
5221	agaggctggc	aagggtctgg	cagggtcccc	aggaatcaca	ggggggcccc	atgtccattt
5281	cagggcccgg	gagccttgga	ctcctctggg	gacagacgac	gtcaccaccg	cccccccccc
5341	atcaggggga	ctagaaggga	ccaggactgc	agtcaccctt	cctgggaccc	agggcccctc
5401	agggcccctc	tggggctcct	gctctgggca	gcttctcctt	caccaataaa	ggcataaacc
5461	tgtgctctcc	cttctgagtc	tttctgggac	gacgggcagg	gggtggagaa	gtgggtggga
5521	gggagtctgg	ctcagaggat	gacagcgggg	ctgggatcca	gggcgtctgc	atcacagtct
5581	tgtgacaact	ggggggccac	acacatcact	gcggctcttt	gaaactttca	ggaaccaggg
5641	agggactcgg	cagagacatc	tgccagttca	cttggagtgt	tcagtcaaca	cccaactctg
5701	acaaaggaca	gaaagtggaa	aatggctgtc	tcttagtcta	ataaatattg	ataagaaact
5761	caagtttgctc	atggatcaat	atgcctttat	gatccagcca	gccactactg	tcgtatcaac
5821	tgatgtaccc	aaacgcactg	atctgtctgg	ctaattgatga	gagattccca	gtagagagct
5881	ggcaagaggt	cacagtgaga	actgtctgca	cacacagcag	agtcaccagg	tcattcctaag
5941	gagatcagtc	ctgggtgttca	ttggaggact	gatgttgaag	ctgaaactcc	atagcttttg
6001	ccacctgatg	tgaagagctg	actcatttga	aaagaccctg	atgtgggaa	agattgaggg
6061	caggaggaga	aggggacgac	agaggatgag	atggttggat	ggcatcacca	acacaatgga
6121	catgggtttg	ggtggactcc	aggagttggg	gatggacagg	gaggcctggc	gtgctacgga
6181	agcggtttat	ggggtcacaa	agactagatg	actgaactga	gctgaactga	atggaaatga
6241	ggtatacagc	aaagtgggga	ttttttatag	aataagaata	tacacataac	atagtgtata
6301	ctcatatttt	tatgcatacc	tgaatgtctc	gtcactcagt	cgtatctgac	tctgtgacct
6361	atggaccgta	gccttccagg	tttcttctgt	ccacagaatt	ctccaaggca	agaatactgg
6421	agtgggtagc	catttctctc	tccaggggat	cctcccagcc	cagggtattga	accggcatct
6481	cctgtatttg	caggtggatt	ctttaccact	gtgccaccag	ggaagcccgt	gttactctct
6541	atgtcccact	taattaccaa	agctgctcca	agaaaaagcc	cctgtgccct	ctgagcttcc
6601	cggcctgcag	aggggtggtg	gggtagactg	tgacctggga	acaccctccc	gcttcaggac
6661	tcccgggcca	cgtgaccac	agtcctgcag	acagccgggt	agctctgctc	ttcaaggctc
6721	attatcttta	aaaaaaactg	aggtctattt	tgtgacttcg	ctgccgtaac	ttctgaacat
6781	ccagtgcgat	ggacaggacc	tcctcccag	gcctcagggg	cttcaggggg	ccagccttca
6841	cctatgagtc	accagacact	cgggggtggc	ccgccttcca	gggtgctcac	agtcttccca
6901	tcgtcctgat	caaagagcaa	gaccaatgac	ttcttaggag	caagcagaca	cccacaggac
6961	actgaggttc	accagagctg	agctgtcctt	ttgaacctaa	agacacacag	ctctcgaagg
7021	ttttctcttt	aatctggatt	taaggcctac	ttggccctca	agagggaaga	cagctctgca
7081	tgtcccagg	acagccactc	ggtggactcc	gaggccactt	agtattatct	gaccgcaccc
7141	tggaaattaat	cgggtccaaac	ttggaacaaaa	ccttgggtggg	aagtttcatc	ccagaggcct
7201	caaccatcct	gctttgacca	ccctgcatct	ttttttcttt	tatgtgtatg	catgtatata
7261	tatatatata	tttttttttt	tttcattttt	tggctgtgct	ggctgttcgt	tgagttcgg
7321	tgcgcaggct	tctctctagt	ttctctctag	tcttctctta	tcacagagca	gtctctaga

FIG. 18 CONT'D

14 / 15

MKCLLLALGLALACGVQAI IVTQTMKGLDIQKVAGTWHSLAMAA  
 SDISLLDAQSAPLRVYVEELKPTPEGNLEILLQKWENGECAQKKI IAEKTKIPAVFKI  
 DALNENKVLVLDTDYKKYLLFCMENSAPPEQSLACQCLVRTPEVDNEALEKFDKALKA  
 LPMHIRLAFNPTQLEGQCHV

FIG. 19

1	ctgaacccag	agagtatata	agaacaagca	aaggggctgg	ggagtggagt	gtagccacga
61	tcacaagaaa	gacgtggtcc	tgacagacag	acaatcctat	tccctaccaa	aatgaagatg
121	ctgctgctgc	tgtgtttggg	actgacccta	gtctgtgtcc	atgcagaaga	agctagttct
181	acgggaagga	actttaatgt	agaaaagatt	aatggggaat	ggcatactat	tatcctggcc
241	tctgacaaaa	gagaaaagat	agaagataat	ggcaacttta	gactttttct	ggagcaaatc
301	catgtcttgg	agaattcctt	agttcttaaa	ttccatactg	taagagatga	agagtgtcgc
361	gaattatcta	tggttgctga	caaaacagaa	aaggctgggtg	aataattctgt	gacgtatgat
421	ggattcaata	catttactat	acctaagaca	gactatgata	actttcttat	ggctcatctc
481	attaacgaaa	aggatgggga	aaccttccag	ctgatggggc	tctatggccg	agaaccagat
541	ttgagttcag	acatcaagga	aaggtttgca	caactatgtg	agaagcatgg	aatccttaga
601	gaaaatatca	ttgacctatc	caatgccaat	cgctgcctcc	aggcccagga	atgaagaatg
661	gcctgagcct	ccagtgttga	gtggagactt	ctcaccagga	ctccaccatc	atcccttcct
721	atccatacag	catccccagt	ataaattctg	tgatctgcat	tccatcctgt	ctcactgaga
781	agtccaattc	cagtctatcc	acatgttacc	taggatacct	catcaagaat	caaagacttc
841	tttaaatttt	tctttgatat	acccatgaca	atttttcatg	aattttctcc	tcttcctggt
901	caataaatga	ttacccttgc	actta			

FIG. 20

MKMLLLLCLGLTLVCVHAEESSTGRNFNVEKINGEWHTIILAS  
 DKREKIEDNGNFRFLFLEQIHVLENSLVLFKHTVRDEECSELSMVADKTEKAGEYSVTY  
 DGFNTFTIPKTDYDNFLMAHLINEKDGETFQLMGLYGREPDLSSDIKERFAQLCEKHG  
 ILRENIIDLNSANRCLQARE

FIG. 21

1	ctgctgctgc	tgtgtctgcg	cctgacactg	gtctgtggcc	atgcagaaga	agctagttcc
61	acaagagggg	acctcgatgt	ggctaagctc	aatggggatt	ggttttctat	tgtcgtggcc
121	tctaacaaaa	gagaaaagat	agaagagaa	ggcagcatga	gagtttttat	gcagcacatc
181	gatgtcttgg	agaattcctt	aggcttcaag	ttccgtatta	aggaaaatgg	agagtgcagg
241	gaactatact	tggtttccta	caaaacgcca	gaggatgggtg	aataattttgt	tgagtatgac
301	ggagggaata	catttactat	acttaagaca	gactactaca	tatacgtcat	gtttcatctc
361	attaatttca	agaacgggga	aaccttccag	ctgatgggtg	tctacggcag	aacaaaggat
421	ctgagttcag	acatcaagga	aaagtttgca	aaactatgtg	aggcgcagtg	aatcactagg
481	gacaatatca	ttgatctaac	caagactgat	cgctgtctcc	aggcccagag	atgaagaaag
541	gcctgagcct	ccagtgttga	gtggagactt	ctcaccagga	ctctagcatc	accattttcct
601	gtccatggag	catcctgaga	caaattctgc	gatctgattt	ccatcctctg	tcacagaaaa
661	gtgcaatcct	ggtctctcca	gcactttccc	tagttaccca	ggacaacaca	tcgagaatta
721	aaagctttct	taaattttctc	ttggccccac	ccatgatcat	tccgcacaaa	tatcttgctc
781	ttgcagttca	ataaatgatt	acccttgcac	ttt		

FIG. 22

15 / 15

atgtccctatactaggttattggaaaattaagggccttgtgcAaccacactcgacttcttttgaatatcttgaagaaaaatga  
 agagcatttgtatgagcgcgatgaaggtgataaatggcgaaacAaaaagtttgaattgggttggagtttcccaatcttcctta  
 ttatattgatggtgatgttaaattaacacagtctatggccatcatagcttatatagctgacaagcacaacatgttgggtggtgtc  
 caaaagagcgtgcagagatttcaatgcttgaaggagcgttttggatattagatagcgtgttcgagaattgcatatagtaa  
 gactttgaaactctcaaaagttgattttcttagcaagctaccigaaatgctgaaaatgttcgaagatcgtttatgtcataaaacatat  
 ttaaattggtgatcatgtaaccatcctgacttcatgttgatgacgctcttgaattgtttatacatggaccaatgtgcctggat  
 gcgttcccaaaattagttgttttaaaaaacgtattgaagctatcccaaaattgataagtacttgaatccagcaagtatatagc  
 atggccttgcagggtggcaagccacgttgggtggcgaccatcctccaaaatcggatctggaagtctgttccagggg  
 cccctgggatccccggaattccgggtcgactcgagcgccgcatcgtgactga

	Met Ser Pro Ile Leu Gly Tyr Trp
241	ATG TCC CCT ATA CTA GGT TAT TGG
	Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu
281	AAA ATT AAG GGC CTT GTG CAA CCC ACT CGA CTT CTT TTG
	Glu Tyr Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg
321	GAA TAT CTT GAA GAA AAA TAT GAA GAG CAT TTG TAT GAG CGC
	Asp Glu Gly Asp Lys Trp Arg Asn Lys Lys Phe Glu Leu
361	GAT GAA GGT GAT AAA TGG CGA AAC AAA AAG TTT GAA TTG
	Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp Gly
401	GGT TTG GAG TTT CCC AAT CTT CCT TAT TAT ATT GAT GGT
	Asp Val Lys Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile
441	GAT GTT AAA TTA ACA CAG TCT ATG GCC ATC ATA CGT TAT ATA
	Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys Glu
481	GCT GAC AAG CAC AAC ATG TTG GGT GGT TGT CCA AAA GAG
	Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp
521	CGT GCA GAG ATT TCA ATG CTT GAA GGA GCG GTT TTG GAT
	Ile Arg Tyr Gly Val Ser Arg Ile Ala Tyr Ser Lys Asp Phe
561	ATT AGA TAC GGT GTT TCG AGA ATT GCA TAT AGT AAA GAC TTT
	Glu Thr Leu Lys Val Asp Phe Leu Ser Lys Leu Pro Glu
601	GAA ACT CTC AAA GTT GAT TTT CTT AGC AAG CTA CCT GAA
	Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys Thr
641	ATG CTG AAA ATG TTC GAA GAT CGT TTA TGT CAT AAA ACA
	Tyr Leu Asn Gly Asp His Val Thr His Pro Asp Phe Met Leu
681	TAT TTA AAT GGT GAT CAT GTA ACC CAT CCT GAC TTC ATG TTG
	Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro Met
721	TAT GAC GCT CTT GAT GTT GTT TTA TAC ATG GAC CCA ATG
	Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys
761	TGC CTG GAT GCG TTC CCA AAA TTA GTT TGT TTT AAA AAA
	Arg Ile Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser
801	CGT ATT GAA GCT ATC CCA CAA ATT GAT AAG TAC TTG AAA TCC
	Ser Lys Tyr Ile Ala Trp Pro Leu Gln Gly Trp Gln Ala
841	AGC AAG TAT ATA GCA TGG CCT TTG CAG GGC TGG CAA GCC
	Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ser Asp Leu
881	ACG TTT GGT GGT GGC GAC CAT CCT CCA AAA TCG GAT CTG
	Glu Val Leu Phe Gln Gly Pro Leu
921	GAA GTT CTG TTC CAG GGG CCC CTG

FIG. 23

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☒ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER: \_\_\_\_\_**

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**